

Lamp Recycling Outreach Project

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On Behalf of the Association of Lighting
and Mercury Recyclers (ALMR)

Background

In January of 2003 the EPA funded a grant in the amount of \$815,000 to the ALMR.

This grant was for the development of a Lamp Recycling Program with the goal of doubling recycling rates for fluorescent lamps within 2 years of implementation.

Implementation is expected to begin in the spring of 2004.

Partners

National Electrical Manufacturers
Association (NEMA)

Association of Lighting and Mercury
Recyclers (ALMR)

Solid Waste Association of North
America (SWANA)



"...to protect human health and to safeguard the natural environment..."

Lamp Recycling Outreach Project

"Lamp Recycling. The Responsible Thing to Do."

This slogan has been adopted by NEMA, SWANA and the ALMR to use with the national outreach and education/ campaign launched in 2003 as part of a **Cooperative Agreement Project for the Development of a Lamp Recycling Outreach Program funded by the U. S. EPA.**

500 million lamps per year Break in the Solid Waste



Water Quality Issues

- When lamps break in the garbage and it rains, the amount of mercury that comes out can exceed federal and state water quality standards.
- Solid waste containers may discharge 10 to 1000 times the allowable mercury (MCLs and TMDLs) when rain or water mixes with broken lamps.
- Clean Water Act
 - PBTs (Persistent Bioaccumulative and Toxic Substances)
 - MCLs (Maximum Contaminant Levels)
 - TMDL (Total Maximum Daily Loading)

Water Quality Issues

Safe Drinking Water Act

Federal Criteria CWA and 40CFR131.36= 0.002 mg/l max.

- National recommended criteria for priority pollutants= 0.001 mg/l max. Continuous is half this amount.
- TMDL can be much lower- 41 states have mercury-impaired waters.

Stormwater Pathway



The Basic Message

- Many lamps are regulated as Hazardous Waste
- Certain Exemptions exist in Federal Policy
- States have different rules- some without Exemptions
- Lamps can be Recycled and mercury can be recovered

Cooperative Agreement

- Phase 1 Grant- produce outreach materials and an implementation plan
- Phase 2 Implementation with states and orgs, EPA awarding additional grants for implementing at local level

Outreach and Education

- Information on Mercury and Hazardous Waste Lamps:
 - Which lamps contain mercury?
 - Who regulates disposal?
 - Who is responsible for mercury-waste management?
 - How can you dispose or recycle mercury-containing lamps properly?

Many People Handle Lamps

- Specialists- lighting industry
- Janitors
- Maintenance workers
- Truck drivers
- Trash handlers
- Contractors, etc.

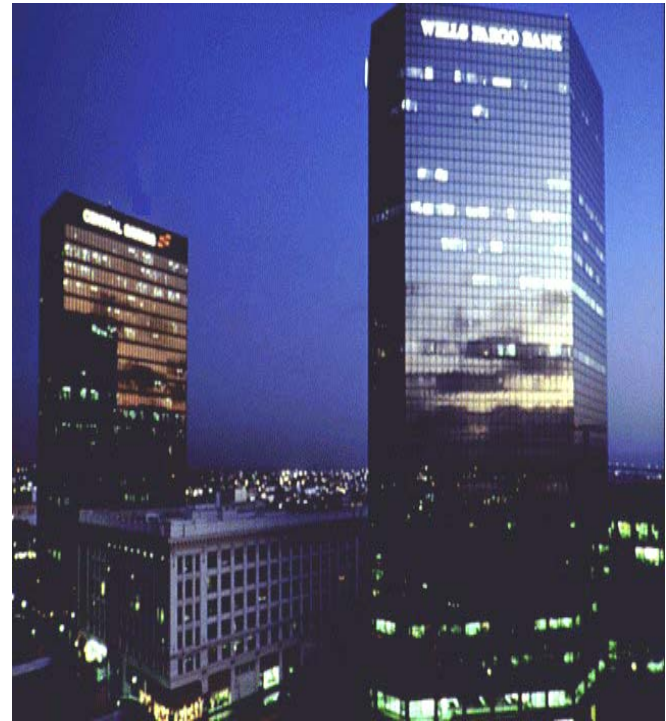




Who is responsible for mercury-
containing lamp management?

Who is the Decision-Maker?

- Different in each building or organization



Outreach

- Goal is to get the right information to the right person so the maximum number of lamps will be diverted from solid waste into Recycling.



Targets for Outreach

- Government
 - Government buildings
 - Local Government Agencies
 - School districts

Targets for Outreach

- Business
 - Institutions, universities, hospitals
 - Building & commercial property owners
 - Contractors: lighting, maintenance, energy efficiency, demolition, etc.
 - ***Estimated 10 million individual businesses in U.S.***

Targets for Outreach

Solid Waste Industry

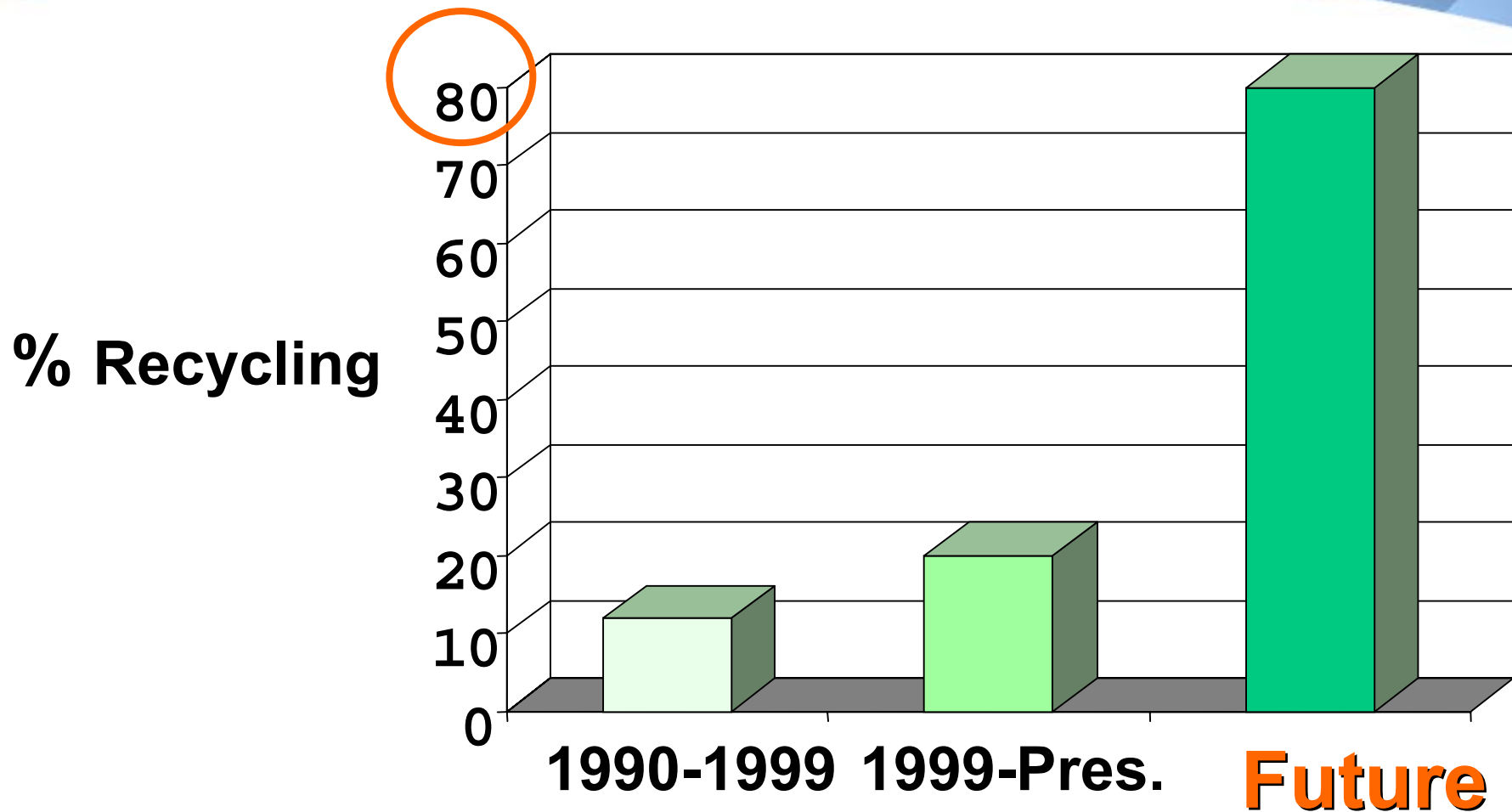
- Haulers
- Transfer Stations
- Landfills
- Recyclers

Targets for Outreach

- Environmental Organizations
- NGOs (Non-governmental organizations, i.e. environmental special interest groups)
- Non-profits
- Other local groups
- Public (exempt from federal regulations)
 - Households may choose to recycle
 - Recycling is voluntary except in some states
 - This project is not targeting homes



Lamp Recycling Progress



*EPA Ultimate Goal = 80% of all
Spent Lamps to be Recycled*

The Bottom Line

- The Outreach Project Goal= Double recycling 2 years from implementation
- Non-exempt generators, handlers and transporters are not allowed to dispose of hazardous lamps into municipal landfills, and must either:
 - Manage them as hazardous waste, or
 - Recycle them

What We Will Deliver

- CD-ROM -- integrated and interactive – this will become the centerpiece of our outreach material
- Printed collateral materials
- Searchable database of states
- FAQs
- Training module
- Business Lamp Recycling Program Implementation Guide

What We Will Deliver

- Implementation Workshops
- Mailers, point of sale information, stickers
- Public service announcements
- Advertisement
- Content for Web pages

Content of our Materials Include

- Federal and State contacts
- Regulations, informational documents
- Organizational contacts
- Messages for targeted groups
- Training and education materials
- Recycling infrastructure
- Hyper-Links

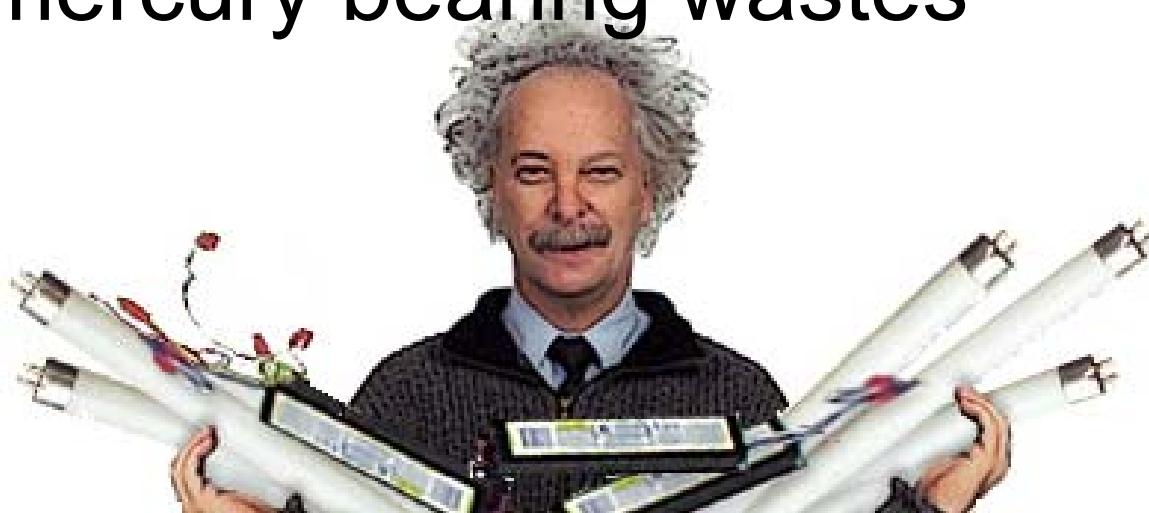
Business Opportunities

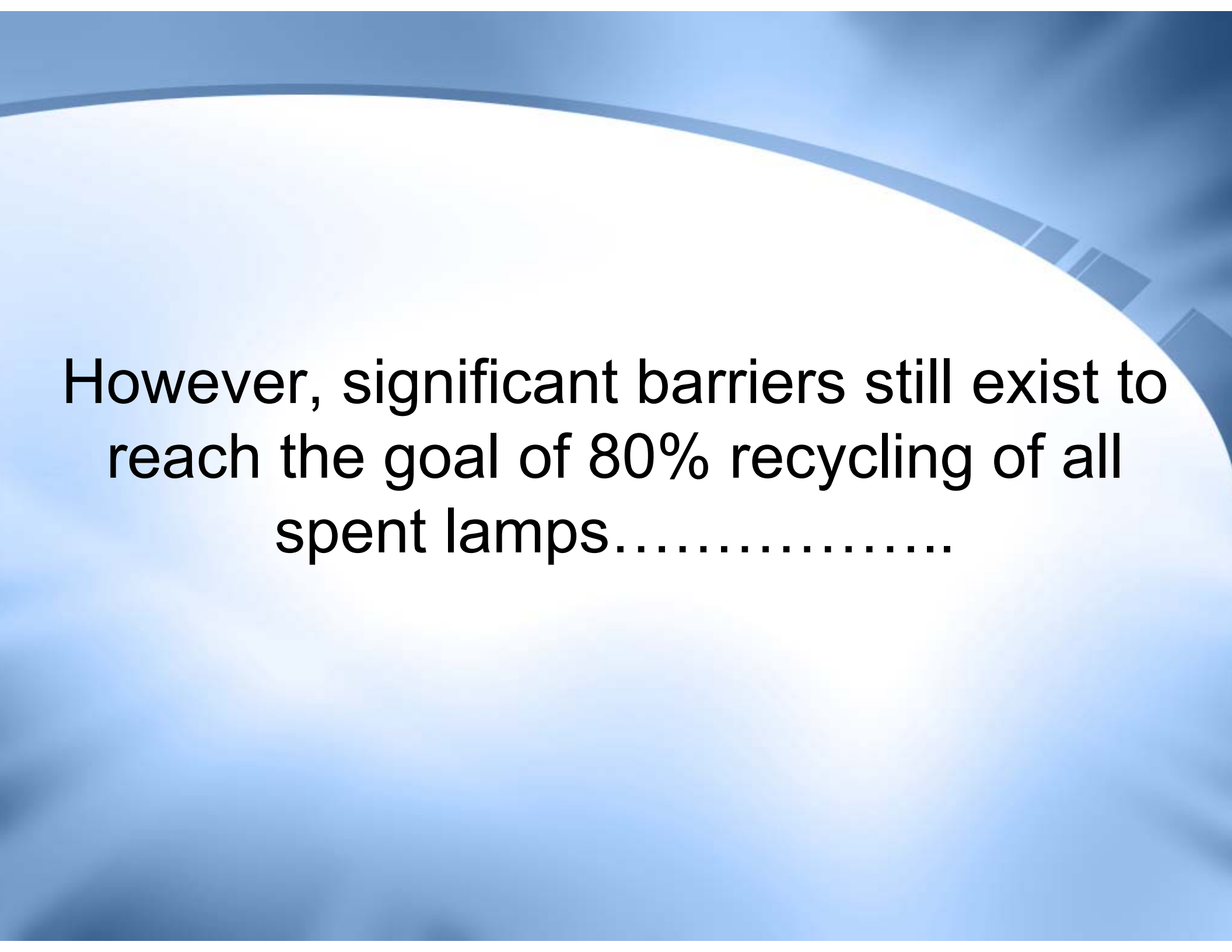
- Lighting service companies
- Energy service companies
- Building maintenance
- Demolition contractors

*... Anyone who removes lamps
from their fixtures*

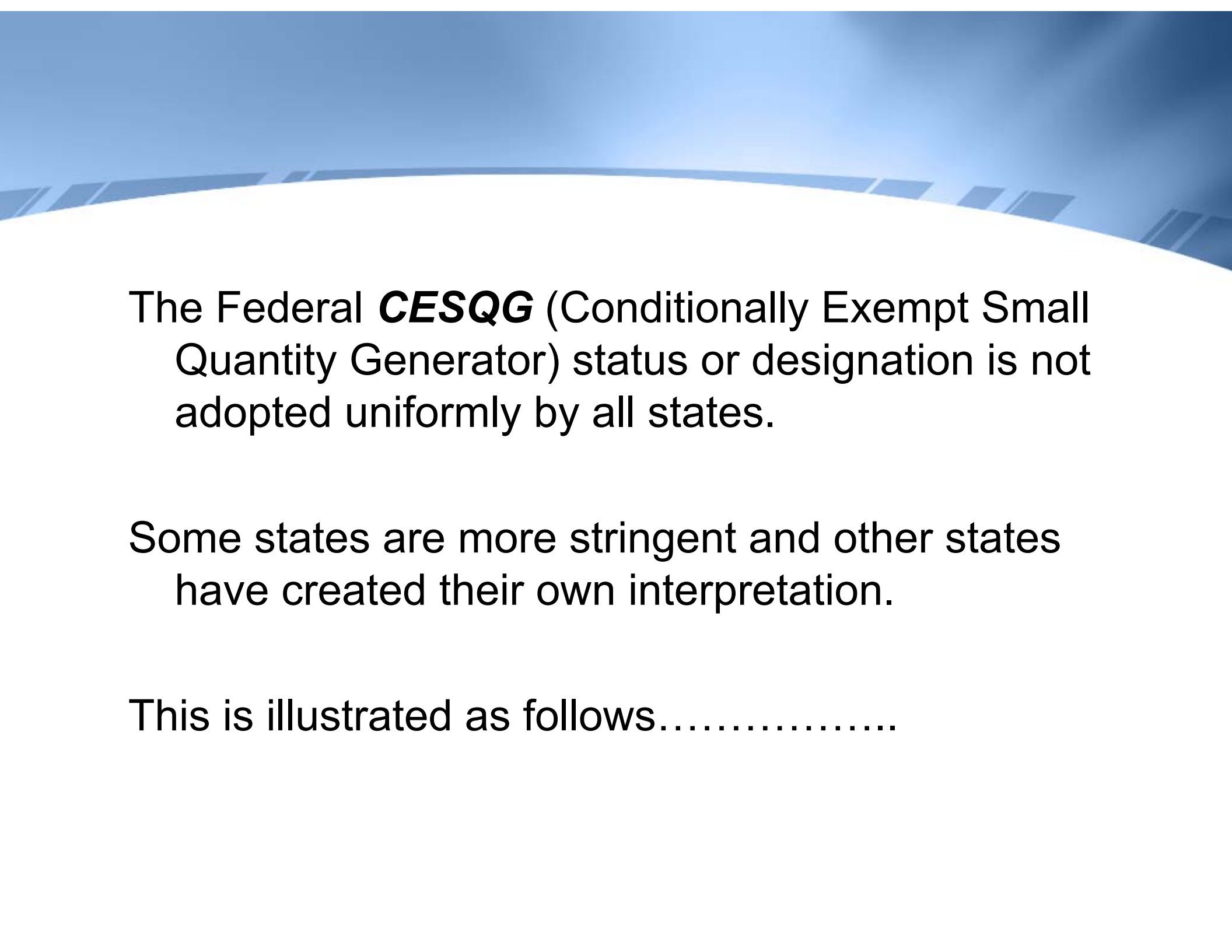
Proper Management

- It's easier now to properly manage spent lamps than ever before...
- Nationally, a movement is growing to require recycling for all mercury lamps and mercury bearing wastes





However, significant barriers still exist to reach the goal of 80% recycling of all spent lamps.....

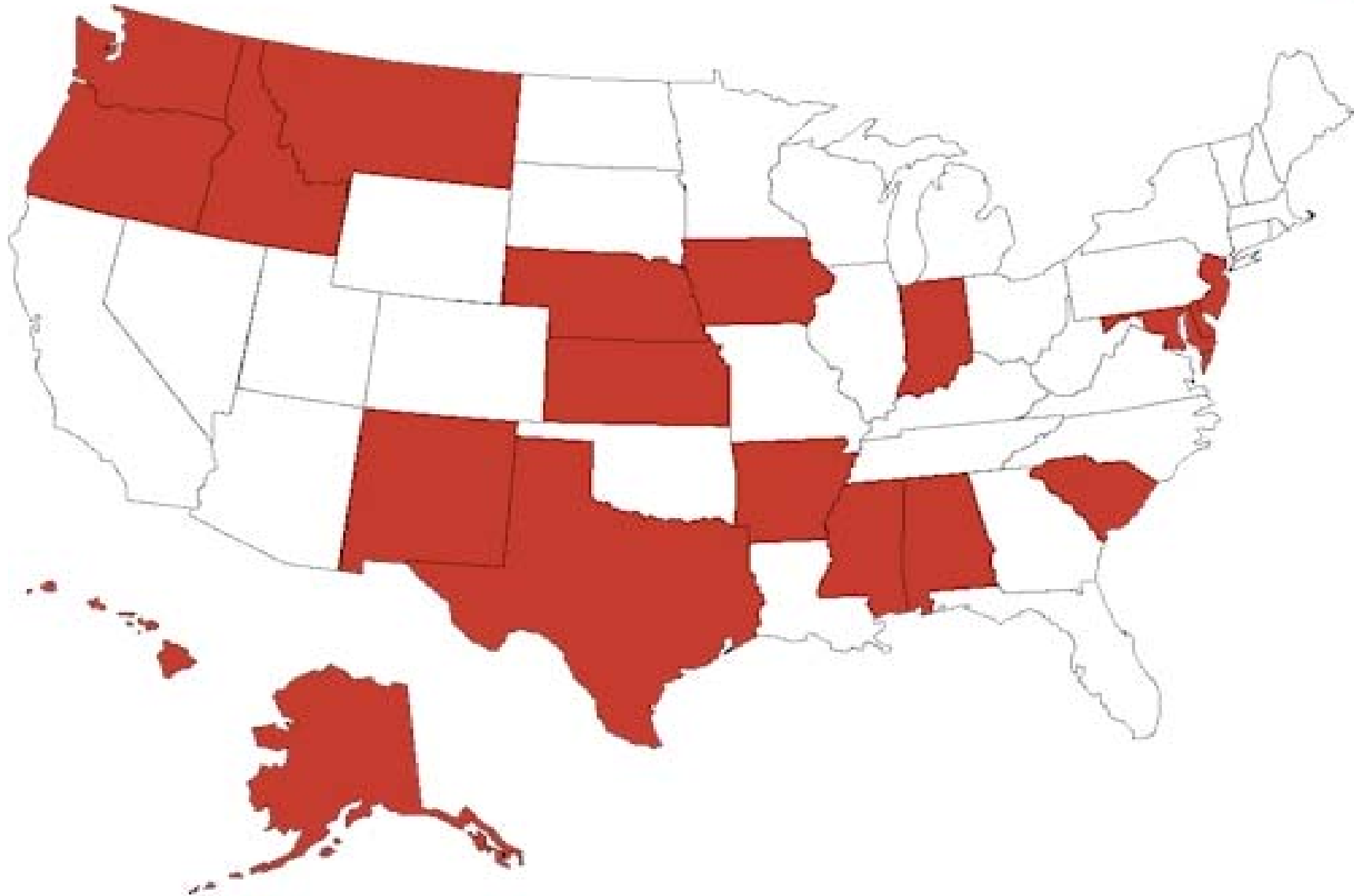


The Federal **CESQG** (Conditionally Exempt Small Quantity Generator) status or designation is not adopted uniformly by all states.

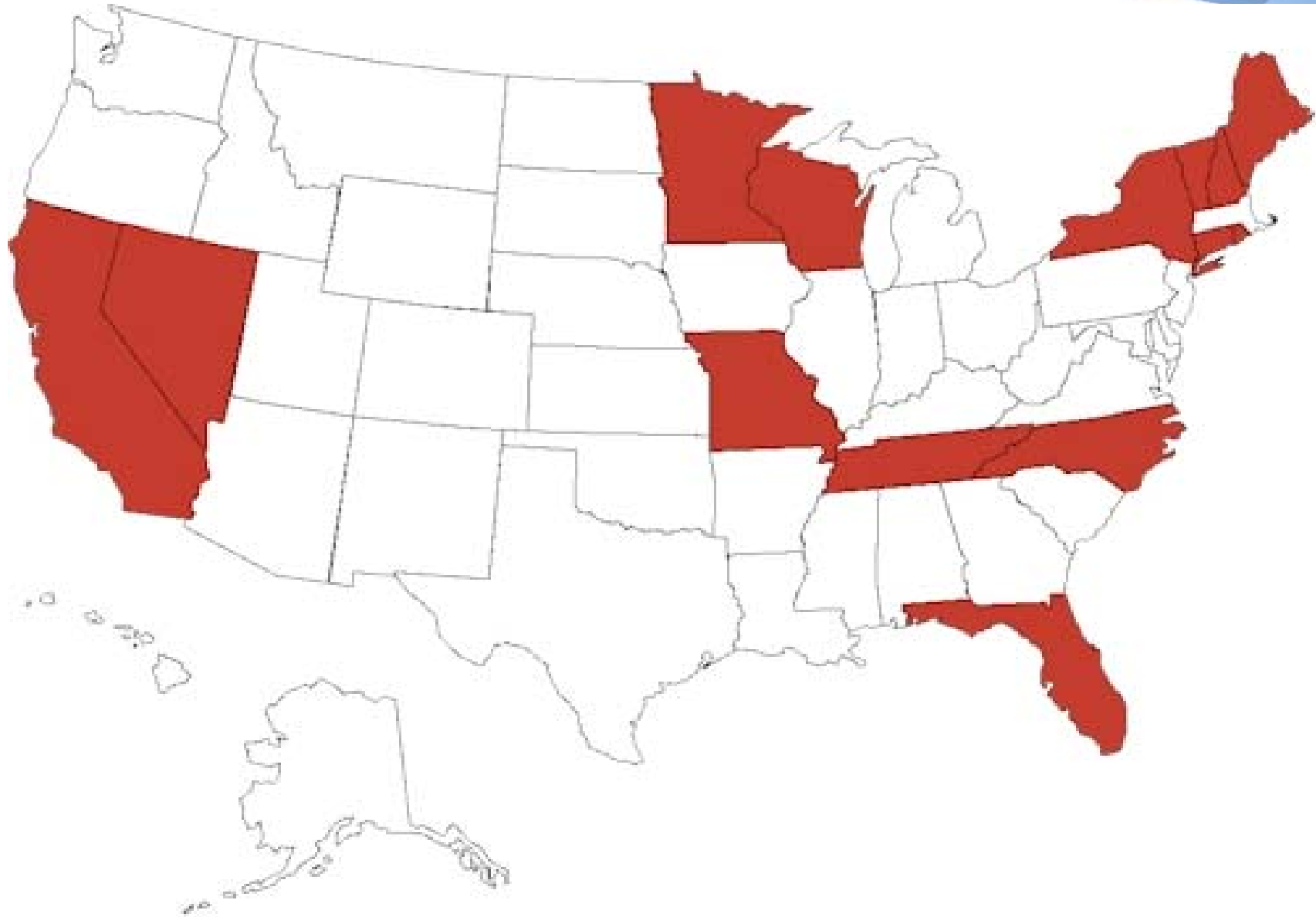
Some states are more stringent and other states have created their own interpretation.

This is illustrated as follows.....

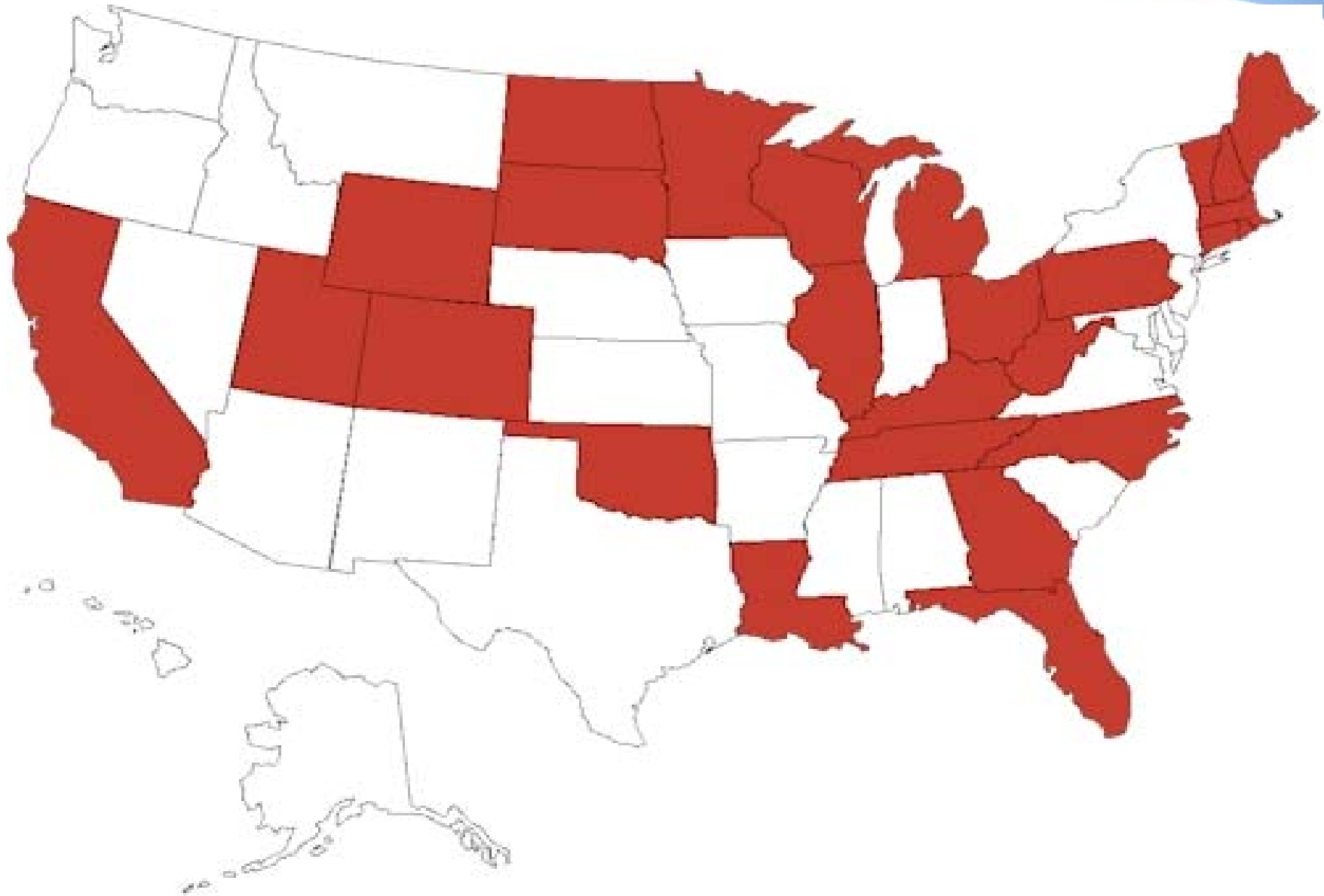
States with same stringency and exemptions as federal policies



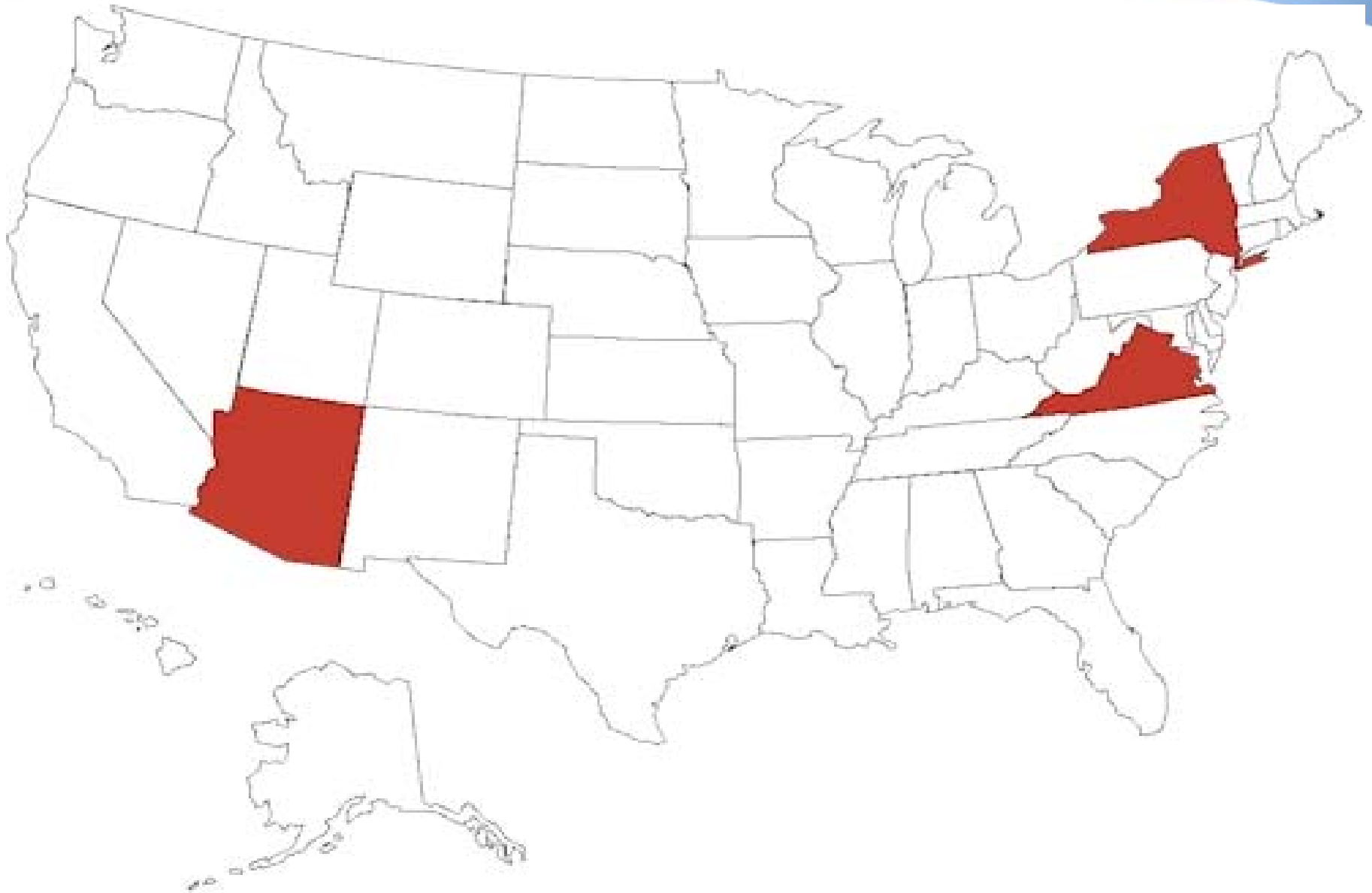
States with no CESQG Exemption for Generators



States that require wastes from CESQGs to be managed as HW



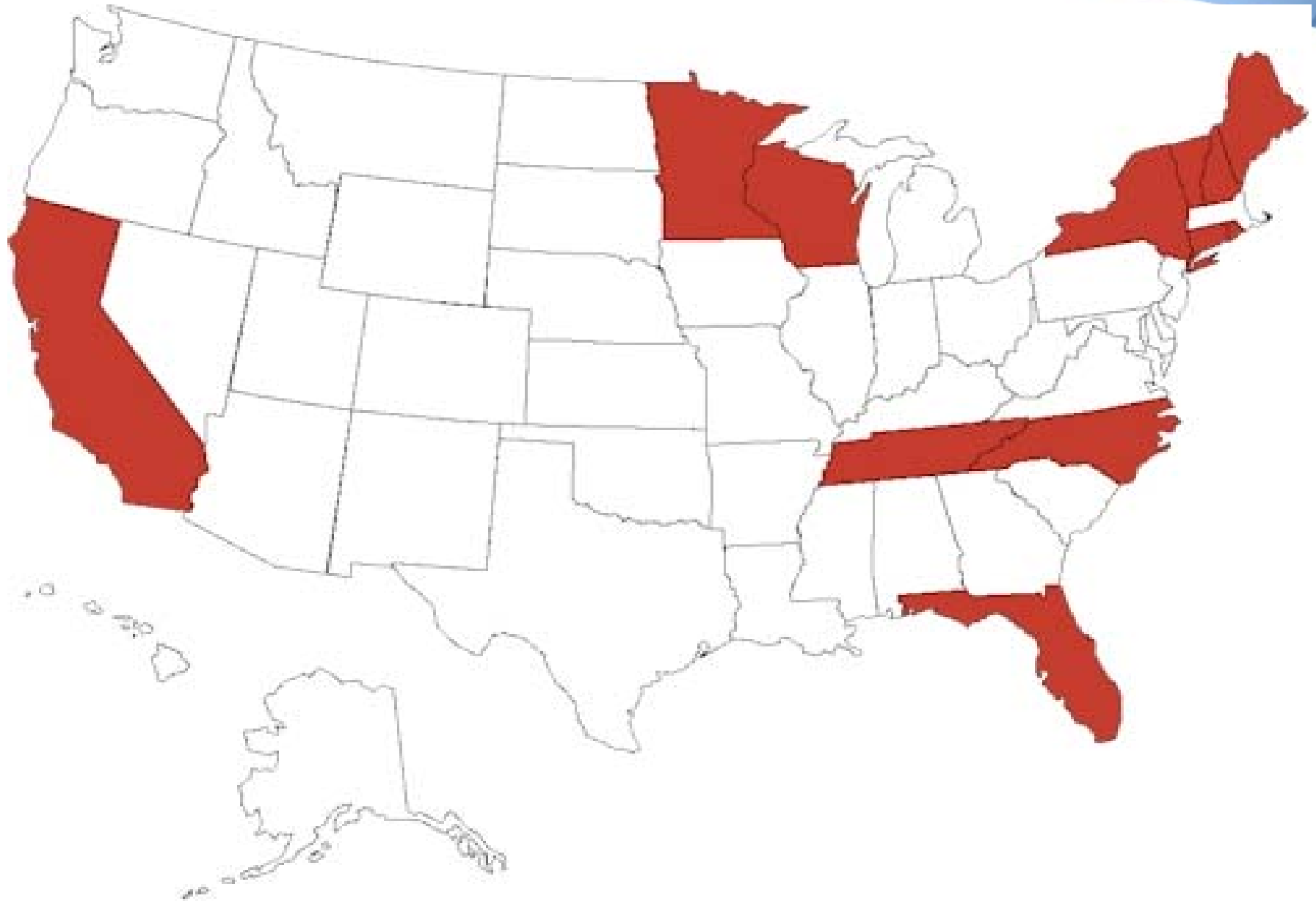
States that allow wastes from CESQGs to go to special MSWLF



States that do not recognize the TCLP exemption for low Hg lamps



States that have multiple stringency requirements



Recycling Barriers

Therefore, problems in marketing our program begin with the Byzantine structure of the Federal and State Rules that prescribe and regulate lamp recycling.....

- Under RCRA, a CESQG is someone that generates less than 100 kg/month of all Hazardous wastes including lamps.
- Most generators don't calculate their volumes of hazardous waste, therefore all of their volume may be lamps.
- 100kg would then equate to approximately 350-400 lamps per month.
- This may translate into a 500,000 square foot facility!
- If the 100kg/month waste volume is exceeded, the generator loses their CESQG status. As a result, generators have planned accordingly!

Recycling Barriers

This brings up other collateral mercury problems.....

- There is a lack of overall enforcement
- There have been few public cases of fines or NOV's issued as a result of audits
- Large building owners of multiple tenant facilities claim exemptions because each of their tenants are CESQG's.
- There are no Federal requirements for tracking of lamps for recycling – as a result there is not an effective way to measure recycling compliance for lamps.

If you can't measure it, you can't manage it.

Recycling Barriers

Further, there are other broader problems our Association has identified.....

- The very measure that determines whether or not a mercury waste stream is classified as hazardous, the TCLP Test (Toxic Characteristic Leaching Procedure), is flawed.
- Elemental mercury does not necessarily leach and there is no correlation between TCLP mercury and the amount of mercury that can get into the environment.

Recycling Barriers

- The appropriate treatment standard for highly contaminated waste (greater than 260 mg/kg) under RCRA, is retorting.
- This standard was established in January 1992
- After extensive study of other treatment technologies, the EPA reaffirmed, in January 2003, that retorting is the most effective method.

HOWEVER.....

Recycling Barriers

- The EPA provided for a more lenient disposal standard in 1994 by changing the definition of certain mercury-bearing wastes by calling them “debris” – which, in turn, created a “mercury debris loophole.”
- There are large volumes of high mercury contaminated waste that are being landfilled using the debris exception or what we call the mercury debris loophole (40 CFR 268.45)
- If the waste is a mercury contaminated object greater than 60mm (about 2”) in size, it can be considered “hazardous debris” under this rule.
- ***This Mercury Waste Debris Loophole includes most all mercury wastes.***

Recycling Barriers

Trans-Border Shipments

- There are large volumes of high mercury containing wastes (i.e. containing more than 260 mg/kg total mercury) being sent to Canada for stabilization and land-filling. Canada accepts these wastes in part because they do not define high subcategory wastes in the same way the US does.
- Generators are further encouraged to ship to Canada because of their belief in the avoidance of CERCLA Superfund responsibilities.
- These wastes are not well tracked, if at all

Our Solutions and Conclusions

- A common Federal Standard for CESQG's needs to be established for mercury wastes. For lamps, we have proposed to the EPA an exception of up to 30 lamps per month.
- A new definition of what constitutes an eligible CESQG needs to be established. Landlords with multi-tenant clients should not be exempt.
- TCLP standard is meaningless – new approach similar to the new California regulatory model should be encouraged.

Our Solutions and Conclusions

- Waste tracking requirements should be established, implemented and enforced. ***If you cannot measure it, you cannot manage it.***
- The debris exemption/loophole should be closed. Quickly and Permanently.
- The trans-border migration of mercury wastes that are not subject to the same treatment standards as in the U.S. should be stopped.

The Association is committed to seeing this plan put into implementation, however more work needs to be done.

We are committed to be good stewards of mercury in the marketplace and the environment.

For More Information, Please Visit...

www.lamprecycle.org

www.almr.org

www.epa.gov/epaoswer/hazwaste/id/univwast/lamp.htm

www.mwsi.com/mercuryregulatoryissues